DK

Carol Vorderman's

Key Stage 2
ages
9-11
Decimals

Maths made easy

Decimals

2.8064
28.064
280.64
2806.4

For England, Wales, Scotland and Ireland

National Testing Preparation

Graduated System of Learning

Pull-out Answer Section

Maths

Supports the maths taught in schools for 9-11 year olds

Progress Chart

This chart lists all the topics in the book. Once you have completed each page, stick a star in the correct box below.

Page	Topic	Star	Page	Topic	Star	Page	Topic	Star
2	Digit value		13	Rounding		24	One-step operations	
3	Digit value		14	Rounding		25	Ordering decimals	
4	Hundredths		15	Decimal equivalents		26	Converting	
5	Hundredths		16	Decimals from fractions		27	Decimals on a number line	
6	Hundredths		17	Making an estimate		28	Ordering decimals	
7	Decimals on a calculator		18	Rounding to 100 and 1000		29	Word problems	
8	Decimals on a calculator		19	Multiplying by 10		30	Rounding	
9	Decimals on a number line		20	Multiplying by 10 and 100		31	Rounding	
10	Decimals on a number line		21	Decimal notation		32	Equivalents	
11	Money		22	Decimal notation				
12	Measurements as decimals		23	One-step operations				

When you have completed this book, fill in the certificate at the back.

C.M.S

Maths made easy

Key Stage 2 upper ages 9-11

Decimals

Authors
Peter Gash and David Clemson

LONDON • NEW YORK • SYDNEY • DELHI

Digit value

In the number 15.7, the digit 1 stands for a ten, the digit 5 for 5 units and the digit 7 for 7 tenths.

Write the values of the circled digits in these numbers.

22.(7)		1(2).9	
1(3).6		(4)8.3	
(3)5.8		25.(5)	
7(2).4		5(9).2	
(2)2.7		12.(9)	
13.(6)		4(8).3	
3(5).8		(2)5.5	
(7)2.4		59.(2)	
69.(1)		(3)2.4	

Digit value

Write the values of the circled digits in these numbers.

33.(8)		2(3).1	
2(4).7		(5)9.4	
(4)6.9		37.(6)	
8(3).5		6(0).3	
(1)4.9		31.(8)	
14.(7)		6(9).4	
5(7).2		(4)7.6	
(9)1.3		71.(5)	
59.(9)		3(6).4	
4(7).3		(7)2.7	

Hundredths

Another way of writing $^{25}/_{100}$ is as a decimal.

$^{25}/_{100} = 0.25$ $^{35}/_{100} = 0.35$ $^{45}/_{100} = 0.45$ and so on.

$1\,^{4}/_{100}$ is written 1.04 as a decimal. The 0 fills the space when there are no tenths.

Write these numbers as decimals.

$1\,^{29}/_{100}$ ☐

$7\,^{47}/_{100}$ ☐

$4\,^{31}/_{100}$ ☐

$5\,^{24}/_{100}$ ☐

$8\,^{67}/_{100}$ ☐

$2\,^{33}/_{100}$ ☐

$6\,^{45}/_{100}$ ☐

$9\,^{75}/_{100}$ ☐

$1\,^{58}/_{100}$ ☐

$4\,^{58}/_{100}$ ☐

$3\,^{10}/_{100}$ ☐

$7\,^{9}/_{100}$ ☐

$2\,^{36}/_{100}$ ☐

$4\,^{85}/_{100}$ ☐

$8\,^{99}/_{100}$ ☐

$3\,^{6}/_{100}$ ☐

$5\,^{18}/_{100}$ ☐

$6\,^{2}/_{100}$ ☐

Hundredths

Write these numbers as decimals.

$4\frac{79}{100}$	$6\frac{14}{100}$
$4\frac{78}{100}$	$2\frac{68}{100}$
$2\frac{41}{100}$	$\frac{7}{100}$
$8\frac{6}{100}$	$\frac{9}{100}$
$7\frac{34}{100}$	$5\frac{54}{100}$
$7\frac{33}{100}$	$2\frac{21}{100}$
$1\frac{79}{100}$	$2\frac{87}{100}$
$\frac{98}{100}$	$8\frac{21}{100}$
$4\frac{44}{100}$	$8\frac{66}{100}$
$6\frac{39}{100}$	$4\frac{12}{100}$
$9\frac{51}{100}$	$1\frac{11}{100}$

Hundredths

In the number 25.68, the digit 2 stands for 2 tens, the digit 5 for 5 units, the digit 6 for 6 tenths and the digit 8 for 8 hundredths.

Write the values of the circled digits.

35.8⑥ _____

4⑤.05 _____

1⑦.78 _____

⑥8.34 _____

⑤8.93 _____

79.5③ _____

83.4④ _____

6①.23 _____

⑨2.84 _____

83.⑤1 _____

24.7⑧ _____

59.4⑥ _____

4⑥.90 _____

③7.69 _____

72.4① _____

10.3⑦ _____

84.7⑤ _____

1②.91 _____

Decimals on a calculator

You will need a calculator. To change 5 to 50 in one operation you can do a multiplication.

$$5 \times 10 = 50$$

You can change 50 back to 5 by dividing.

$$50 \div 10 = 5$$

Write the multiplying or dividing operations you can use to change these numbers. Try them on your calculator. The first one has been done for you.

2 to 20	x 10	30 to 3	
50 to 5		7 to 70	
80 to 8		25 to 2.5	
4.2 to 42		9.5 to 95	
2.9 to 0.29		3.5 to 35	
1.05 to 10.5		40.7 to 4.07	
6.6 to 66		58 to 5.8	

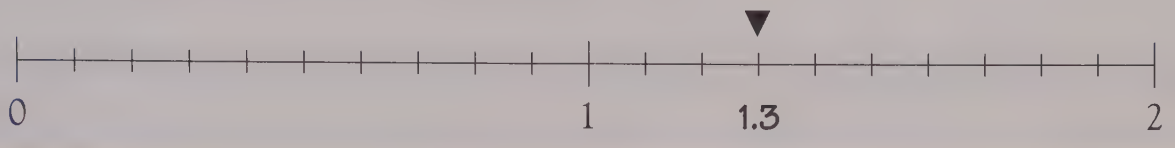
Decimals on a calculator

Write the multiplying or dividing operations you can use to change these numbers. Try them on your calculator.

6 to 600		11 to 1.1	
100 to 10		3 to 30	
6.4 to 640		13.9 to 139	
4.2 to 0.42		5.75 to 575	
50 to 5000		8 to 0.08	
29 to 2.9		50 to 0.5	
8.6 to 86		47 to 470	
530 to 5.3		6 to 0.6	
2.9 to 29		4.16 to 416	
1000 to 10		250 to 25	

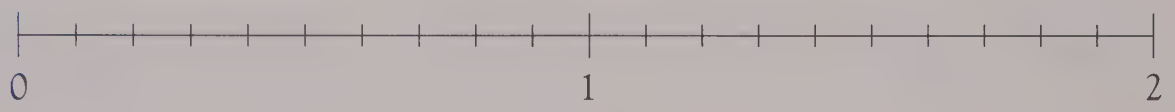
Decimals on a number line

You can show decimals on a number line. The arrow shows 1.3.



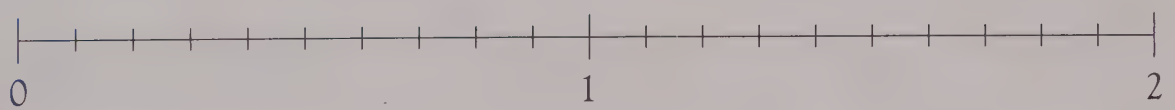
Draw arrows to show these decimals on the number lines.

0.3 and 1.5



0.9 and 1.7

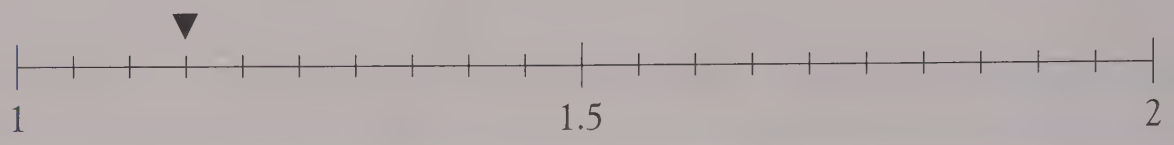
0.7 and 1.4



0.8 and 1.9

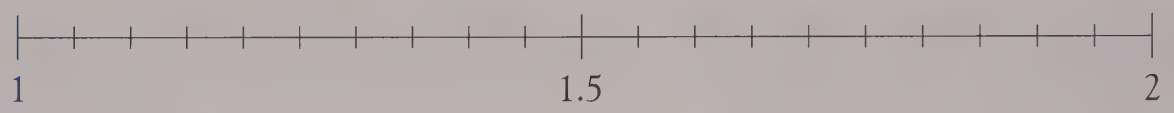
Decimals on a number line

You can show hundredths as decimals on a number line. The arrow shows 1.15.

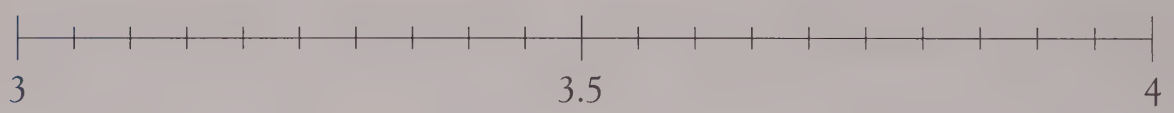


Draw arrows to show these decimals on the number lines.

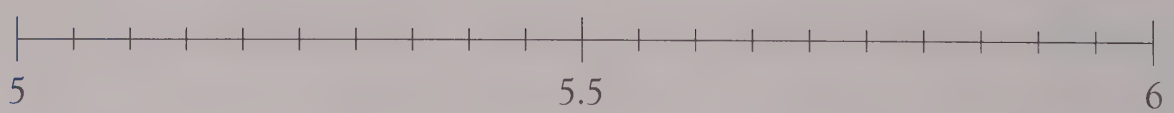
1.4, 1.65 and 1.95



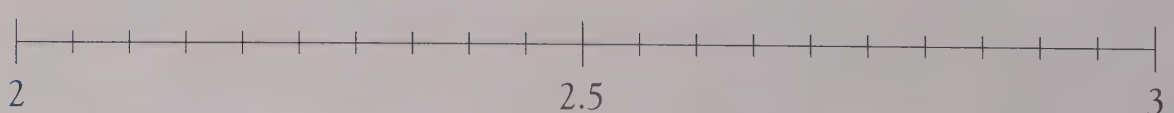
3.45, 3.55 and 3.8



5.3, 5.35 and 5.85



2.1, 2.25 and 2.75



Money

You can write amounts of money like decimals. There are 100p in £1, so you can write it as £1.00. You can write 105p as £1.05.

Write these amounts of money like decimals.

486p		75p	
912p		570p	
456p		2p	
103p		415p	
510p		59p	
8p		45p	
705p		133p	
999p		1250p	
7p		1035p	
89p		1009p	

Measurements as decimals

You can write measurements using a decimal point.

It is used to separate whole metres from centimetres:

125 cm = 1.25 m

or whole kilometres from metres:

4270 m = 4.27 km

or whole kilograms from grams:

3750 g = 3.75 kg

or whole litres from millilitres:

5250 ml = 5.25 litres

Write these measurements like decimals.

150 cm		m	1750 g		kg
1500 ml		litres	1250 m		km
575 cm		m	45 cm		m
2200 ml		litres	3950 g		kg
1450 m		km	1760 m		km
3900 ml		litres	5500 g		kg
195 cm		m	500 g		kg
2350 g		kg	6750 m		km

Rounding

When rounding decimals to the nearest whole number, numbers ending in 0.50 or more are *rounded up*. Numbers ending in 0.49 or less are *rounded down*.

2.48 rounds down to 2, and 3.75 rounds up to 4.

Round these decimals up or down to the nearest whole number.

4.29		7.86	
6.57		59.45	
7.43		42.71	
18.2		91.93	
52.1		62.78	
8.85		13.64	
9.01		26.01	
5.63		35.55	

Rounding

Round these amounts of money and measurements up or down to the nearest whole number.

£4.65		8.65 kg	
5.35 kg		£3.15	
£8.10		6.3 m	
7.75 cm		2.85 m	
5.89 cm		£3.55	
£6.37		9.45 kg	
5.25 kg		4.1 m	
£0.50		8.88 kg	
6.05 cm		£25.49	

Decimal equivalents

Write the decimal equivalents.

$\frac{8}{10}$ = ☐

$\frac{4}{10}$ = ☐

489p = ☐

35p = ☐

$\frac{1}{5}$ = ☐

35 cm = ☐

625 cm = ☐

$\frac{4}{5}$ = ☐

275p = ☐

150p = ☐

55 cm = ☐

$\frac{1}{10}$ = ☐

$\frac{2}{5}$ = ☐

280 cm = ☐

308p = ☐

16 cm = ☐

Decimals from fractions

You will need a calculator.

To find a decimal from a fraction, you can divide the numerator by the denominator.

To find the decimal for $\frac{1}{10}$, divide 1 by 10 on the calculator.
The display should read 0.1

Use your calculator to find the decimal equivalents of these fractions. Write the divisions you can use.

	Division	Answer		Division	Answer
$\frac{1}{100}$ =		=	$\frac{2}{10}$ =		=
$\frac{25}{100}$ =		=	$\frac{5}{100}$ =		=
$\frac{49}{100}$ =		=	$\frac{7}{10}$ =		=
$\frac{3}{4}$ =		=	$\frac{1}{4}$ =		=
$\frac{1}{2}$ =		=	$\frac{50}{100}$ =		=
$\frac{10}{100}$ =		=	$\frac{3}{60}$ =		=

Answer Section

Key Stage 2 upper
Ages 9–11
Decimals

As your child finishes each page, check the answers together. Your child may like to stick a gold star at the top of each completed page as well as on the progress chart at the beginning of the book.

2

Digit value

In the number 15.7, the digit 1 stands for a ten, the digit 5 for 5 units and the digit 7 for 7 tenths.

Write the values of the circled digits in these numbers.

22.⑦	7 tenths	1⑫.9	2 units
1⑬.6	3 units	④8.3	4 tens
③5.8	3 tens	25.⑤	5 tenths
7⑫.4	2 units	5⑨.2	9 units
⑫2.7	2 tens	12.⑨	9 tenths
13.⑥	6 tenths	4⑧.3	8 units
3⑤.8	5 units	⑫5.5	2 tens
⑦2.4	7 tens	59.⑫	2 tenths
69.①	1 tenth	③2.4	3 tens

3

Digit value

Write the values of the circled digits in these numbers.

33.⑧	8 tenths	2⑬.1	3 units
2④.7	4 units	⑤9.4	5 tens
④6.9	4 tens	37.⑥	6 tenths
8⑬.5	3 units	6⓪.3	0 units
①4.9	1 ten	31.⑧	8 tenths
14.⑦	7 tenths	6⑨.4	9 units
5⑦.2	7 units	④7.6	4 tens
⑨1.3	9 tens	71.⑤	5 tenths
59.⑨	9 tenths	3⑥.4	6 units
4⑦.3	7 units	⑦2.7	7 tens

4

Hundredths

Another way of writing $^{25}/_{100}$ is as a decimal.

$^{25}/_{100}$ = 0.25 $^{35}/_{100}$ = 0.35 $^{45}/_{100}$ = 0.45 and so on.

$1\frac{4}{100}$ is written 1.04 as a decimal. The 0 fills the space when there are no tenths.

Write these numbers as decimals.

$1^{29}/_{100}$	1.29	$4^{58}/_{100}$	4.58
$7^{47}/_{100}$	7.47	$3^{10}/_{100}$	3.1
$4^{31}/_{100}$	4.31	$7^{9}/_{100}$	7.09
$5^{24}/_{100}$	5.24	$2^{36}/_{100}$	2.36
$8^{67}/_{100}$	8.67	$4^{85}/_{100}$	4.85
$2^{33}/_{100}$	2.33	$8^{99}/_{100}$	8.99
$6^{45}/_{100}$	6.45	$3^{6}/_{100}$	3.06
$9^{75}/_{100}$	9.75	$5^{18}/_{100}$	5.18
$1^{58}/_{100}$	1.58	$6^{2}/_{100}$	6.02

5

Hundredths

Write these numbers as decimals.

$4\frac{79}{100}$	4.79	$6\frac{14}{100}$	6.14
$4\frac{78}{100}$	4.78	$2\frac{68}{100}$	2.68
$2\frac{41}{100}$	2.41	$\frac{7}{100}$	0.07
$8\frac{6}{100}$	8.06	$\frac{9}{100}$	0.09
$7\frac{34}{100}$	7.34	$5\frac{54}{100}$	5.54
$7\frac{33}{100}$	7.33	$2\frac{21}{100}$	2.21
$1\frac{79}{100}$	1.79	$2\frac{87}{100}$	2.87
$\frac{98}{100}$	0.98	$8\frac{21}{100}$	8.21
$4\frac{44}{100}$	4.44	$8\frac{66}{100}$	8.66
$6\frac{39}{100}$	6.39	$4\frac{12}{100}$	4.12
$9\frac{51}{100}$	9.51	$1\frac{11}{100}$	1.11

6

Hundredths

In the number 25.68, the digit 2 stands for 2 tens, the digit 5 for 5 units, the digit 6 for 6 tenths and the digit 8 for 8 hundredths.

Write the values of the circled digits.

35.8⑥	6 hundredths	4⑤.05	5 units
1⑦.78	7 units	⑥8.34	6 tens
⑤8.93	5 tens	79.5③	3 hundredths
83.4④	4 hundredths	6①.23	1 unit
⑨2.84	9 tens	83.⑤1	5 tenths
24.7⑧	8 hundredths	59.4⑥	6 hundredths
4⑥.90	6 units	③7.69	3 tens
72.4①	1 hundredth	10.3⑦	7 hundredths
84.7⑤	5 hundredths	1②.91	2 units

7

Decimals on a calculator

You will need a calculator. To change 5 to 50 in one operation you can do a multiplication.

$$5 \times 10 = 50$$

You can change 50 back to 5 by dividing.

$$50 \div 10 = 5$$

Write the multiplying or dividing operations you can use to change these numbers. Try them on your calculator. The first one has been done for you.

2 to 20	x 10	30 to 3	÷ 10
50 to 5	÷ 10	7 to 70	x 10
80 to 8	÷ 10	25 to 2.5	÷ 10
4.2 to 42	x 10	9.5 to 95	x 10
2.9 to 0.29	÷ 10	3.5 to 35	x 10
1.05 to 10.5	x 10	40.7 to 4.07	÷ 10
6.6 to 66	x 10	58 to 5.8	÷ 10

8

Decimals on a calculator

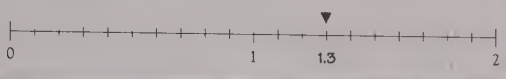
Write the multiplying or dividing operations you can use to change these numbers. Try them on your calculator.

6 to 600	x 100	11 to 1.1	÷ 10
100 to 10	÷ 10	3 to 30	x 10
6.4 to 640	x 100	13.9 to 139	x 10
4.2 to 0.42	÷ 10	5.75 to 575	x 100
50 to 5000	x 100	8 to 0.08	÷ 100
29 to 2.9	÷ 10	50 to 0.5	÷ 100
8.6 to 86	x 10	47 to 470	x 10
530 to 5.3	÷ 100	6 to 0.6	÷ 10
2.9 to 29	x 10	4.16 to 416	x 100
1000 to 10	÷ 100	250 to 25	÷ 10

9

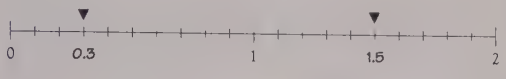
Decimals on a number line

You can show decimals on a number line. The arrow shows 1.3.

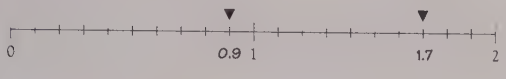


Draw arrows to show these decimals on the number lines.

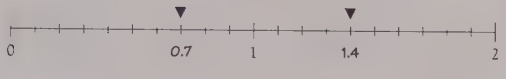
0.3 and 1.5



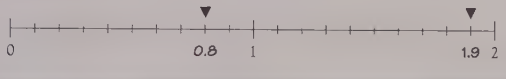
0.9 and 1.7



0.7 and 1.4



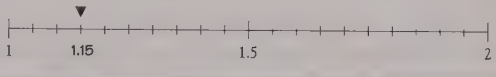
0.8 and 1.9



10

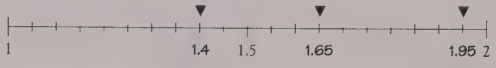
Decimals on a number line

You can show hundredths as decimals on a number line. The arrow shows 1.15.

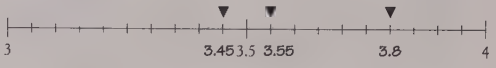


Draw arrows to show these decimals on the number lines.

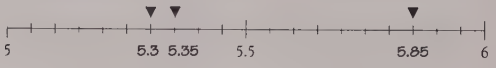
1.4, 1.65 and 1.95



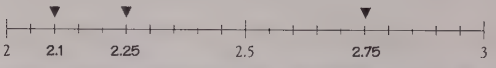
3.45, 3.55 and 3.8



5.3, 5.35 and 5.85



2.1, 2.25 and 2.75



11

Money

You can write amounts of money like decimals. There are 100p in £1, so you can write it as £1.00. You can write 105p as £1.05.

Write these amounts of money like decimals.

486p	£4.86	75p	£0.75
912p	£9.12	570p	£5.70
456p	£4.56	2p	£0.02
103p	£1.03	415p	£4.15
510p	£5.10	59p	£0.59
8p	£0.08	45p	£0.45
705p	£7.05	133p	£1.33
999p	£9.99	1250p	£12.50
7p	£0.07	1035p	£10.35
89p	£0.89	1009p	£10.09

12

Measurements as decimals

You can write measurements using a decimal point.
It is used to separate whole metres from centimetres:
125 cm = 1.25 m
or whole kilometres from metres:
4270 m = 4.27 km
or whole kilograms from grams:
3750 g = 3.75 kg
or whole litres from millilitres:
5250 ml = 5.25 litres

Write these measurements like decimals.

150 cm	1.5	m	1750 g	1.75	kg
1500 ml	1.5	litres	1250 m	1.25	km
575 cm	5.75	m	45 cm	0.45	m
2200 ml	2.2	litres	3950 g	3.95	kg
1450 m	1.45	km	1760 m	1.76	km
3900 ml	3.9	litres	5500 g	5.5	kg
195 cm	1.95	m	500 g	0.5	kg
2350 g	2.35	kg	6750 m	6.75	km

13

Rounding

When rounding decimals to the nearest whole number, numbers ending in 0.50 or more are *rounded up*. Numbers ending in 0.49 or less are *rounded down*.

2.48 rounds down to 2, and 3.75 rounds up to 4.

Round these decimals up or down to the nearest whole number.

4.29	4	7.86	8
6.57	7	59.45	59
7.43	7	42.71	43
18.2	18	91.93	92
52.1	52	62.78	63
8.85	9	13.64	14
9.01	9	26.01	26
5.63	6	35.55	36

14

Rounding

Round these amounts of money and measurements up or down to the nearest whole number.

£4.65	£5	8.65 kg	9 kg
5.35 kg	5 kg	£3.15	£3
£8.10	£8	6.3 m	6 m
7.75 cm	8 cm	2.85 m	3 m
5.89 cm	6 cm	£3.55	£4
£6.37	£6	9.45 kg	9 kg
5.25 kg	5 kg	4.1 m	4 m
£0.50	£1	8.88 kg	9 kg
6.05 cm	6 cm	£25.49	£25

15

Decimal equivalents

Write the decimal equivalents.

$^{8}/_{10}$ =	0.8	$^{4}/_{10}$ =	0.4
489p =	£4.89	35p =	£0.35
$^{1}/_{5}$ =	0.2	35 cm =	0.35 m
625 cm =	6.25 m	$^{4}/_{5}$ =	0.8
275p =	£2.75	150p =	£1.50
55 cm =	0.55 m	$^{1}/_{10}$ =	0.1
$^{2}/_{5}$ =	0.4	280 cm =	2.8 m
308p =	£3.08	16 cm =	0.16 m

16

Decimals from fractions

You will need a calculator.

To find a decimal from a fraction, you can divide the numerator by the denominator.

To find the decimal for $^{1}/_{10}$, divide 1 by 10 on the calculator. The display should read 0.1

Use your calculator to find the decimal equivalents of these fractions. Write the divisions you can use.

	Division	Answer		Division	Answer
$^{1}/_{100}$ =	1 ÷ 100	= 0.01	$^{2}/_{10}$ =	2 ÷ 10	= 0.2
$^{25}/_{100}$ =	25 ÷ 100	= 0.25	$^{5}/_{100}$ =	5 ÷ 100	= 0.05
$^{49}/_{100}$ =	49 ÷ 100	= 0.49	$^{7}/_{10}$ =	7 ÷ 10	= 0.7
$^{3}/_{4}$ =	3 ÷ 4	= 0.75	$^{1}/_{4}$ =	1 ÷ 4	= 0.25
$^{1}/_{2}$ =	1 ÷ 2	= 0.5	$^{50}/_{100}$ =	50 ÷ 100	= 0.5
$^{10}/_{100}$ =	10 ÷ 100	= 0.1	$^{3}/_{60}$ =	3 ÷ 60	= 0.05

17

Making an estimate

Write whether you would estimate the following to the nearest 10, 100, 1000, 10 000, 100 000 or 1 000 000.

The number of insects on Earth.	1 000 000
The number of children in a class.	10
The number of shops in a town.	100 or 1000
The number of people watching a TV soap.	1 000 000
The number of spectators at an important football match.	10 000
The cost of a fleet of 15 cars (in pounds).	£100 000

Give examples, similar to those above, of something that you might estimate to the nearest:

10	people on a bus
100	words on a page
1000	trees in an orchard
10 000	people at a pop concert
100 000	books in a library
1 000 000	stars in the sky

Answers may vary

18

Rounding to 100 and 1000

Round these numbers to the nearest 100 and then to the nearest 1000.

978		6829		3735	
1000	1000	6800	7000	3700	4000
7511		2716		1008	
7500	8000	2700	3000	1000	1000

Round the heights of these buildings to the nearest 100 cm.

12.76 m	36.17 m	22.98 m	18.22 m
1300 cm	3600 cm	2300 cm	1800 cm

Draw a ring around the option that shows the calculation in the box rounded to the nearest 1000.

1626 + 953	5443 – 3771
1500 + 1000	5500 – 3500
2000 + 1000	6000 – 4000
2500 + 900	5000 – 4000

19

Multiplying by 10

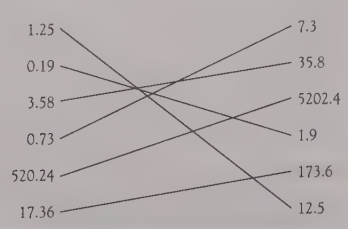
Multiply these decimals by 10.

0.25	2.5	3.14	31.4
1.75	17.5	15.27	152.7
5.56	55.6	156.35	1563.5

These statues are one tenth of their real heights. Write their real heights.

32.8 mm	44.5 mm	22.6 mm
328 mm	445 mm	226 mm

Multiply each number on the left by 10 and draw a line to join it to the correct answer on the right.



20

Multiplying by 10 and 100

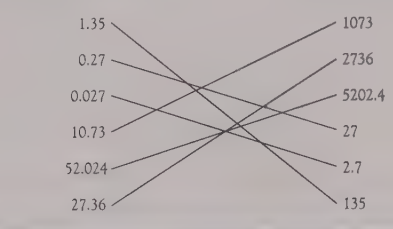
Multiply these decimals by 100.

6.25	625	3.14	314
11.75	1175	5.27	527
35.56	3556	1506.25	150 625

Write the missing numbers in the boxes.

0.06	0.6	6
101.1	1011	10 110
0.09	0.9	9
13.26	132.6	1326
3.145	31.45	314.5

Multiply each decimal on the left by 100 and draw a line to join it to the correct answer on the right.



21

Decimal notation

You can write a decimal in words.

For example, 1.123 is one and one tenth, two hundredths and three thousandths.

Write out these decimals in words.

3.517 — Three and five tenths, one hundredth and seven thousandths.

0.115 — One tenth, one hundredth and five thousandths.

1.023 — One and two hundredths and three thousandths.

16.002 — Sixteen and two thousandths.

4.448 — Four and four tenths, four hundredths and eight thousandths.

22

Decimal notation

Write the decimal equivalents for each of the following.

Three and six thousandths.

3.006

One tenth, three hundredths and seven thousandths.

0.137

Two tenths and five thousandths.

0.205

Fifteen and three tenths, one hundredth and six thousandths.

15.316

Nine tenths and nine thousandths.

0.909

Twelve and one thousandth.

12.001

23

One-step operations

You will need a calculator.
To change 2.5 to 25 in one operation you can do a multiplication.

$2.5 \times 10 = 25$

You can change 25 back to 2.5 by dividing.

$25 \div 10 = 2.5$

Similarly, you can change 2.5 to 250, and 250 back to 2.5 by multiplying and dividing by 100.

Write the one-step operation you can use to change these numbers. Try them on your calculator.

3.6 to 36	x 10	15.2 to 1.52	÷ 10
4.8 to 480	x 100	250 to 2.5	÷ 100
0.2 to 0.02	÷ 10	0.01 to 1	x 100
330 to 3.3	÷ 100	990 to 9.9	÷ 100
5 to 0.05	÷ 100	0.3 to 3	x 10
70 to 0.7	÷ 100	5.5 to 550	x 100

24

One-step operations

You will need a calculator.
To continue the pattern 2, 2.5, 3, 3.5 and so on, you can do an addition.

$2 + 0.5 = 2.5 \quad 2.5 + 0.5 = 3 \quad 3 + 0.5 = 3.5$ and so on.

So the one step needed to continue the pattern is to add 0.5 each time.

Use a calculator to work out the one-step operation you can use to continue these patterns. Write the step.

1.82, 1.84, 1.86 and so on

Add 0.02 each time.

0.09, 0.10, 0.11 and so on

Add 0.01 each time.

5, 0.5, 0.05 and so on

Divide by 10 each time.

0.16, 0.32, 0.64 and so on

Multiply by 2 each time.

1.55, 1.8, 2.05 and so on

Add 0.25 each time.

0.064, 0.128, 0.256 and so on

Multiply by 2 each time.

25

Ordering decimals

Put these amounts in order from the largest to the smallest.

£3.56	£6.35	£3.65	£5.63	£5.36
£6.35	£5.63	£5.36	£3.65	£3.56
12.65 km	16.25 km	15.26 km	15.62 km	12.56 km
16.25 km	15.62 km	15.26 km	12.65 km	12.56 km
0.55 kg	0.09 kg	0.45 kg	0.54 kg	0.155 kg
0.55 kg	0.54 kg	0.45 kg	0.155 kg	0.09 kg

Put these amounts in order from the smallest to the largest.

106p	£1.60	£0.95	97p	£1.65
£0.95	97p	106p	£1.60	£1.65
1.35 m	110 cm	136 cm	1.53 m	1.01 m
1.01 m	110 cm	1.35 m	136 cm	1.53 m
1.25 litres	1200 ml	2.15 litres	1500 ml	1.56 litres
1200 ml	1.25 litres	1500 ml	1.56 litres	2.15 litres

26

Converting

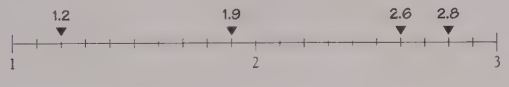
Convert these units.

2.125 km into m	2125 m
15.15 km into m	15 150 m
6.05 km into m	6050 m
7.005 km into m	7005 m
7.255 kg into g	7255 g
3.5 kg into g	3500 g
7.155 kg into g	7155 g
10.025 kg into g	10 025 g
1.25 litres into ml	1250 ml
10.25 litres into ml	10 250 ml
0.755 litres into ml	755 ml
1.055 litres into ml	1055 ml

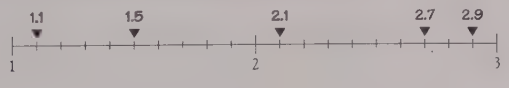
27

Decimals on a number line

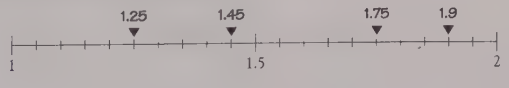
Write the decimal each arrow is pointing to.



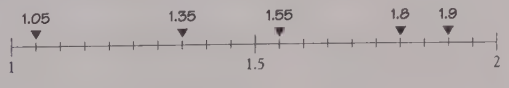
Draw arrows to show these decimals on the number line: 1.1, 2.7, 1.5, 2.9, 2.1



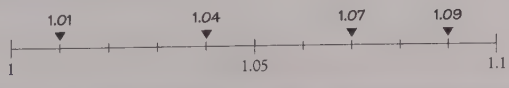
Write the decimal each arrow is pointing to.



Draw arrows to show these decimals on the number line: 1.05, 1.55, 1.8, 1.35, 1.9



Write the decimal each arrow is pointing to.



28

Ordering decimals

Put these amounts in order from the largest to the smallest.

3.25	12.2	2.87	2.78	3.2
12.2	3.25	3.2	2.87	2.78
6.675	7.765	7.567	6.576	7.665
7.765	7.665	7.567	6.675	6.576

Put these amounts in order from the smallest to the largest.

1.75	1.57	2.05	2.15	2.005
1.57	1.75	2.005	2.05	2.15
16.681	18.616	16.816	18.661	18.166
16.681	16.816	18.166	18.616	18.661

Write the missing numbers to complete the sequences.

3.17	3.175	3.18
15.06	15.065	15.07
12.9	12.85	12.8
7.65	7.655	7.66
7.65	7.645	7.64

29

Word problems

	Answer	Working out
Add 2.3 litres and 450 ml.	2.75 litres	2.3 + 0.45 = 2.75
Add 375 ml and 5.25 litres.	5.625 litres	0.375 + 5.250 = 5.625
Subtract 255 g from 1.4 kg.	1.145 kg	1.400 − 0.255 = 1.145
Subtract 363 g from 2.59 kg.	2.227 kg	2.590 − 0.363 = 2.227

Solve these problems.

	Answer	Working out
A bag of nails weighs 1.25 kg and a small bag of screws weighs 225 g. What is the total weight of one bag of nails and two bags of screws?	1.7 kg	0.225 × 2 = 0.450 and 1.25 + 0.45 = 1.70
Andrew weighed some dried beans. They weighed 1.63 kg. He took 325 g of beans off the scales. What was the weight of the remaining beans?	1.305 kg	1.630 − 0.325 = 1.305
A measuring jug contained 1.75 litres of water. Sarah poured in another 355 ml. How much water was in the measuring jug?	2.105 litres	1.750 + 0.355 = 2.105
Indu made 1.85 litres of soup in a saucepan and then poured out two bowls, each of which took 325 ml. How much soup is left in the saucepan?	1.2 litres	0.325 × 2 = 0.650 and 1.85 − 0.65 = 1.20

30

Rounding

Round each decimal to the nearest whole number.

9.7	10	10.3	10
39.8	40	14.5	15
3.78	4	14.33	14
6.43	6	18.05	18
38.29	38	156.82	157
957.19	957	100.95	101
999.99	1000	101.01	101
9.09	9	110.11	110

31

Rounding

Round each decimal to the nearest tenth.

3.28	3.3	2.83	2.8
9.47	9.5	12.53	12.5
12.59	12.6	111.51	111.5
111.15	111.2	17.12	17.1
17.17	17.2	2.58	2.6
1.53	1.5	8.96	9
1.99	2	22.07	22.1
24.25	24.3	5.55	5.6
100.01	100	19.89	19.9

32

Equivalents

Write the fraction or decimal equivalents.

$\frac{7}{10}$	0.7
0.06	$\frac{6}{100}$ or $\frac{3}{50}$
0.003	$\frac{3}{1000}$
0.025	$\frac{25}{1000}$ or $\frac{1}{40}$
$\frac{17}{100}$	0.17
5.17	$5\frac{17}{100}$
6.25	$6\frac{25}{100}$ or $6\frac{1}{4}$
0.525	$\frac{525}{1000}$ or $\frac{21}{40}$
4.205	$4\frac{205}{1000}$ or $4\frac{41}{200}$
1.99	$1\frac{99}{100}$
1.09	$1\frac{9}{100}$
1.009	$1\frac{9}{1000}$
9.09	$9\frac{9}{100}$
9.99	$9\frac{99}{100}$

Making an estimate

Write whether you would estimate the following to the nearest 10, 100, 1000, 10 000, 100 000 or 1 000 000.

The number of insects on Earth. ☐

The number of children in a class. ☐

The number of shops in a town. ☐

The number of people watching a TV soap. ☐

The number of spectators at an important football match. ☐

The cost of a fleet of 15 cars (in pounds). ☐

Give examples, similar to those above, of something that you might estimate to the nearest:

10 ☐

100 ☐

1000 ☐

10 000 ☐

100 000 ☐

1 000 000 ☐

Rounding to 100 and 1000

Round these numbers to the nearest 100 and then to the nearest 1000.

978 ☐ ☐

6829 ☐ ☐

3735 ☐ ☐

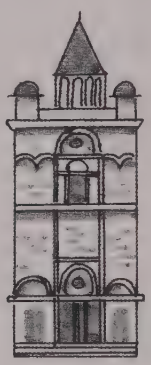
7511 ☐ ☐

2716 ☐ ☐

1008 ☐ ☐

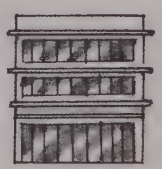
Round the heights of these buildings to the nearest 100 cm.

12.76 m ☐



36.17 m ☐

22.98 m ☐



18.22 m ☐

Draw a ring around the option that shows the calculation in the box rounded to the nearest 1000.

1626 + 953	5443 – 3771
1500 + 1000	5500 – 3500
2000 + 1000	6000 – 4000
2500 + 900	5000 – 4000

Multiplying by 10

Multiply these decimals by 10.

0.25		3.14	
1.75		15.27	
5.56		156.35	

These statues are one tenth of their real heights. Write their real heights.

32.8 mm

44.5 mm

22.6 mm

Multiply each number on the left by 10 and draw a line to join it to the correct answer on the right.

1.25	7.3
0.19	35.8
3.58	5202.4
0.73	1.9
520.24	173.6
17.36	12.5

Multiplying by 10 and 100

Multiply these decimals by 100.

6.25		3.14	
11.75		5.27	
35.56		1506.25	

Write the missing numbers in the boxes.

0.06		6
101.1	1011	
0.09	0.9	
13.26		
3.145		

Multiply each decimal on the left by 100 and draw a line to join it to the correct answer on the right.

1.35	1073
0.27	2736
0.027	5202.4
10.73	27
52.024	2.7
27.36	135

Decimal notation

You can write a decimal in words.

For example, 1.123 is one and one tenth, two hundredths and three thousandths.

Write out these decimals in words.

3.517

0.115

1.023

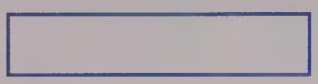
16.002

4.448

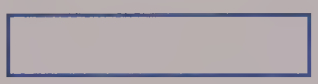
Decimal notation

Write the decimal equivalents for each of the following.

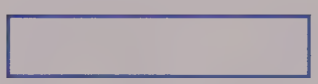
Three and six thousandths.



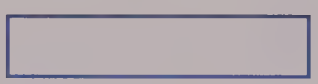
One tenth, three hundredths and seven thousandths.



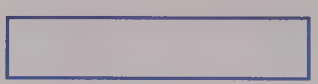
Two tenths and five thousandths.



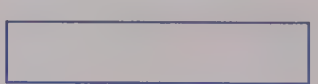
Fifteen and three tenths, one hundredth and six thousandths.



Nine tenths and nine thousandths.



Twelve and one thousandth.



One-step operations

You will need a calculator.
To change 2.5 to 25 in one operation you can do a multiplication.

$$2.5 \times 10 = 25$$

You can change 25 back to 2.5 by dividing.

$$25 \div 10 = 2.5$$

Similarly, you can change 2.5 to 250, and 250 back to 2.5 by multiplying and dividing by 100.

Write the one-step operation you can use to change these numbers. Try them on your calculator.

3.6 to 36 ☐

15.2 to 1.52 ☐

4.8 to 480 ☐

250 to 2.5 ☐

0.2 to 0.02 ☐

0.01 to 1 ☐

330 to 3.3 ☐

990 to 9.9 ☐

5 to 0.05 ☐

0.3 to 3 ☐

70 to 0.7 ☐

5.5 to 550 ☐

One-step operations

You will need a calculator.
To continue the pattern 2, 2.5, 3, 3.5 and so on, you can do an addition.

$2 + 0.5 = 2.5 \quad 2.5 + 0.5 = 3 \quad 3 + 0.5 = 3.5$ and so on.

So the one step needed to continue the pattern is to add 0.5 each time.

Use a calculator to work out the one-step operation you can use to continue these patterns. Write the step.

1.82, 1.84, 1.86 and so on

0.09, 0.10, 0.11 and so on

5, 0.5, 0.05 and so on

0.16, 0.32, 0.64 and so on

1.55, 1.8, 2.05 and so on

0.064, 0.128, 0.256 and so on

Ordering decimals

Put these amounts in order from the largest to the smallest.

£3.56	£6.35	£3.65	£5.63	£5.36
12.65 km	16.25 km	15.26 km	15.62 km	12.56 km
0.55 kg	0.09 kg	0.45 kg	0.54 kg	0.155 kg

Put these amounts in order from the smallest to the largest.

106p	£1.60	£0.95	97p	£1.65
1.35 m	110 cm	136 cm	1.53 m	1.01 m
1.25 litres	1200 ml	2.15 litres	1500 ml	1.56 litres

Converting

Convert these units.

2.125 km into m

15.15 km into m

6.05 km into m

7.005 km into m

7.255 kg into g

3.5 kg into g

7.155 kg into g

10.025 kg into g

1.25 litres into ml

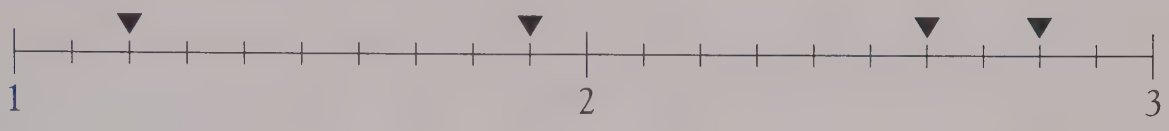
10.25 litres into ml

0.755 litres into ml

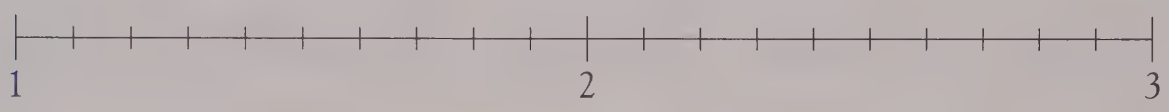
1.055 litres into ml

Decimals on a number line

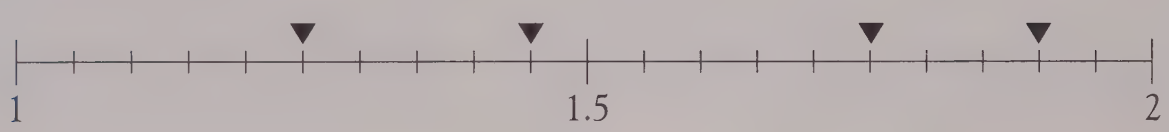
Write the decimal each arrow is pointing to.



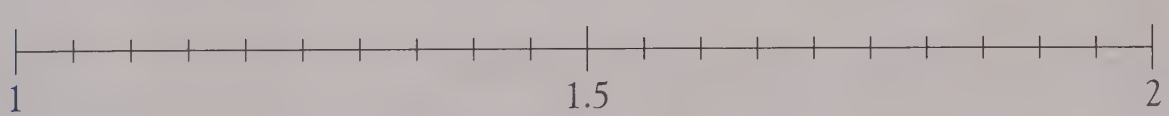
Draw arrows to show these decimals on the number line: 1.1, 2.7, 1.5, 2.9, 2.1



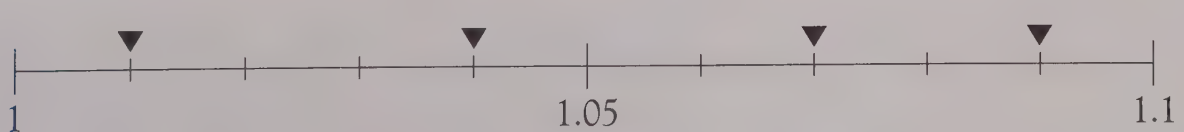
Write the decimal each arrow is pointing to.



Draw arrows to show these decimals on the number line: 1.05, 1.55, 1.8, 1.35, 1.9



Write the decimal each arrow is pointing to.



Ordering decimals

Put these amounts in order from the largest to the smallest.

3.25	12.2	2.87	2.78	3.2

6.675	7.765	7.567	6.576	7.665

Put these amounts in order from the smallest to the largest.

1.75	1.57	2.05	2.15	2.005

16.681	18.616	16.816	18.661	18.166

Write the missing numbers to complete the sequences.

3.17 ☐ 3.18

15.06 ☐ 15.07

12.9 ☐ 12.8

7.65 ☐ 7.66

7.65 ☐ 7.64

Word problems

	Answer	Working out
Add 2.3 litres and 450 ml.		
Add 375 ml and 5.25 litres.		
Subtract 255 g from 1.4 kg.		
Subtract 363 g from 2.59 kg.		

Solve these problems.

	Answer	Working out
A bag of nails weighs 1.25 kg and a small bag of screws weighs 225 g. What is the total weight of one bag of nails and two bags of screws?		
Andrew weighed some dried beans. They weighed 1.63 kg. He took 325 g of beans off the scales. What was the weight of the remaining beans?		
A measuring jug contained 1.75 litres of water. Sarah poured in another 355 ml. How much water was in the measuring jug?		
Indu made 1.85 litres of soup in a saucepan and then poured out two bowls, each of which took 325 ml. How much soup is left in the saucepan?		

Rounding

Round each decimal to the nearest whole number.

9.7		10.3	
39.8		14.5	
3.78		14.33	
6.43		18.05	
38.29		156.82	
957.19		100.95	
999.99		101.01	
9.09		110.11	

Rounding

Round each decimal to the nearest tenth.

3.28		2.83	
9.47		12.53	
12.59		111.51	
111.15		17.12	
17.17		2.58	
1.53		8.96	
1.99		22.07	
24.25		5.55	
100.01		19.89	

Equivalents

Write the fraction or decimal equivalents.

$\frac{7}{10}$	
0.06	
0.003	
0.025	
$\frac{17}{100}$	
5.17	
6.25	
0.525	
4.205	
1.99	
1.09	
1.009	
9.09	
9.99	

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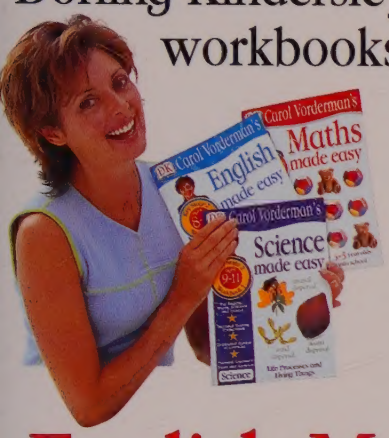

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Authors

Peter Gash has many years experience teaching maths to Primary school and special needs children. He has been the author and consultant on a number of highly successful maths schemes and has acted as consultant on several multimedia maths projects.

David Clemson is an experienced maths teacher who has taught in Primary, Middle and Secondary schools and also in Higher Education. He has written more than 90 books and has been a consultant on several multimedia projects. He has also written for national newspapers and has appeared on television and radio.

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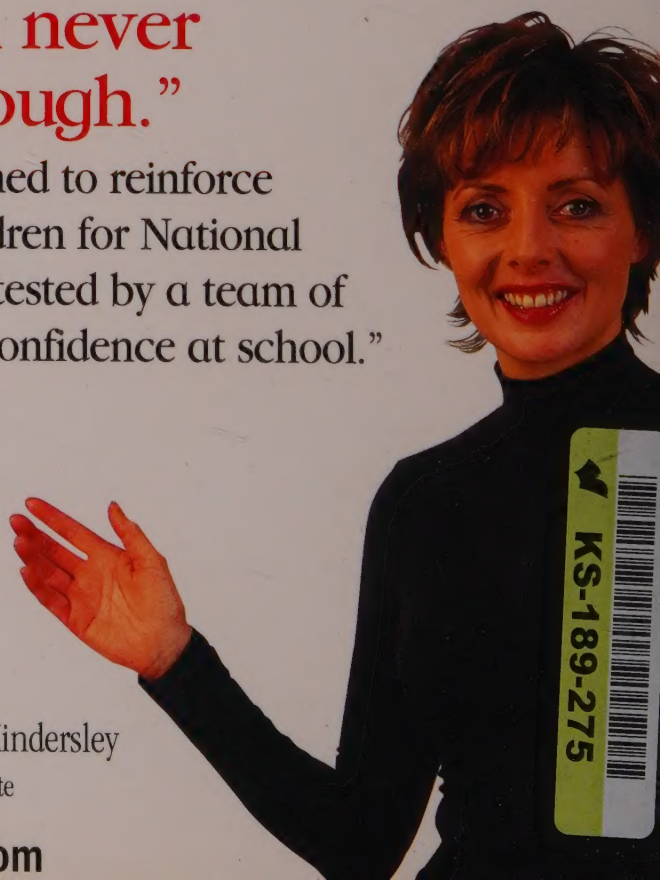

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